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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,541

04/26/2006

Dieter Stroh

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23338 7590 01/05/2010
DENNISON, SCHULTZ & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

PATEL, DEVANG R

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

01/05/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,541	Applicant(s) STROH ET AL.	
	Examiner DEVANG PATEL	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 15, 17-20 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 15, 17-20 and 22-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/5/09 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

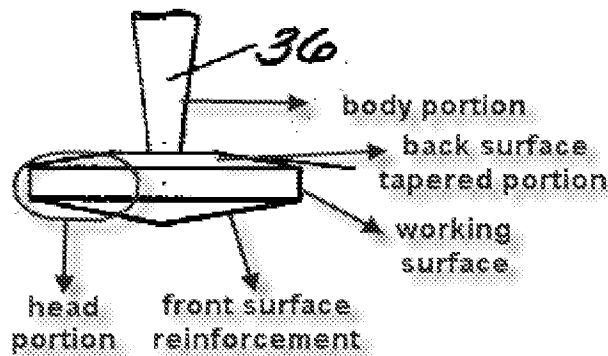
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 14-15, 17-20, 22-23 and 27** are rejected under 35 U.S.C. 102(b) as being anticipated by Elmore et al. (US 3017792, of record).

a. **Regarding claim 14**, Elmore et al. ("**Elmore**") discloses a sonotrode for an ultrasonic welding device having a longitudinal axis, the sonotrode (see diagram below) having a body portion and a head portion of greater diameter than the body portion and comprising at least one working surface for welding metal which is substantially parallel to the longitudinal axis, a front surface which is substantially perpendicular to the at least one working surface, and a back

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surface which includes a tapered portion of gradually reducing diameter in the direction of the body portion, the back surface and tapered portion joining the working surface to the body portion (figs. 1-3, 9; col. 9, lines 5-34). The sonotrode transfers ultrasonic vibrations in the direction of the longitudinal axis and the front surface of the sonotrode includes a reinforcement which is capable of reducing deflection of the working surface since it is structurally indistinguishable from the claimed reinforcement. The reinforcement has a triangular, protruding geometry in a section of the longitudinal axis and is shaped symmetrically with respect to a symmetry plane in which the longitudinal axis runs (fig. 3; col. 7, lines 40-45). Note similarities between Elmore's Figure 3 and Applicant's Figure 2.



b. **As to claim 15**, in accordance with broadest reasonable interpretation, the term "rib" is defined to be a structural member that supports any shape and so, the reinforcement of Elmore is equivalent to a rib (figs. 2-6).

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- c. **As to claim 17**, the reinforcement of Elmore increases in height over the front surface from a peripheral edge of the front surface at the at least one working surface, in the direction of the longitudinal axis.
- d. **As to claim 18**, the reinforcement of Elmore runs perpendicular to the at least one working surface.
- e. **As to claims 19-20 and 22**, the reinforcement of Elmore is shaped as a beam in a linear manner. The reinforcement projects from the entire front surface.
- f. **As to claim 23**, the limitation of deflection upon ultrasonic excitation concerns functionality of the reinforcement. Since the reinforcement of Elmore is structurally indistinguishable from the claimed reinforcement, such triangular reinforcement is inherently expected to provide the claimed deflection ratio.
- g. **As to claim 27**, the reinforcement of Elmore is unitary in structure with the sonotrode head (figs. 2-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 24-26** are rejected under 35 U.S.C. 103(a) as being obvious over Elmore et al. (US 3017792).

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h. **As to claims 24-26**, Elmore does not expressly disclose the reinforcement extension distance over the front surface. However, Elmore teaches that one having ordinary skill in the art can modify the tapered resonant tips with known equations for many tapered structures in order to calculate with a fair degree of precision the precise dimensions of the taper. Elmore further teaches that the dimensions of the resonant tips can be adjusted to compensate for taper, other modifications in shape, and to stabilize performance frequency (col. 7, lines 15-45). In view of that, it would have been obvious to a person of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges of reinforcement extension (such as 10 mm) through routine experimentation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. An artisan would have been motivated to select the claimed ranges of reinforcement extension in order to compensate for taper, other modifications in shape, and to stabilize performance frequency (col. 7, lines 15-45).

Response to Amendment and Arguments

Applicant's arguments filed 10/5/09 have been fully considered but they are not persuasive.

Applicant argues that the sonotrode of Elmore functions in a different manner from the sonotrode of the invention. Applicant further argues that the oscillation

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behavior of the sonotrode is different from that of Elmore since the working surfaces are in the antinode of the sonotrode, whereas in Elmore, the working surface is in the antinode of the disk connected to the sonotrode. Applicant also argues that the disk edge of Elmore moves away with respect to the axis of sonotrode (fig. 7a), while such movements are prevented by the reinforcement according to the present invention.

First, as mentioned previously, Examiner reminds Applicant that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (See MPEP 2114). The sonotrode disclosed by Elmore is structurally indistinguishable from the claimed sonotrode as shown in the rejection above and thus, Elmore anticipates the claims. Secondly, in response to argument concerning working surface and antinodes, it is noted that the features upon which applicant relies (i.e., working surfaces are in the antinodes of the sonotrode) are not recited in the rejected claim(s). Similarly, in response to argument regarding preventing disk edge movement with respect to the sonotrode axis, it is noted that the features upon which applicant relies (i.e., preventing movements as argued) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Conclusion

Claims 14-15, 17-20 and 22-27 are rejected.

The rejections above rely on the references for all the teachings expressed in the text of the references and/or one of ordinary skill in the art would have reasonably

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understood from the texts. Only specific portions of the texts have been pointed out to emphasize certain aspects of the prior art, however, each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

Applicant is reminded to specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. 1.121; 37 C.F.R. Part 41.37; and MPEP 714.02.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVANG PATEL whose telephone number is (571)270-3636. The examiner can normally be reached on Monday thru Thursday, 8:00 am to 5:30 pm, EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devang Patel/
Examiner, Art Unit 1793

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793